Assessment of Outcomes of Submental Island Pedicled Flap and Radial Forearm Free Flap in Oral Reconstruction

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Abstract

Objective

Submental island pedicled flap (SIPF) and radial forearm free flap (RFFF) have both been used for reconstruction following resection of oral cavity and oropharyngeal squamous cell carcinoma. The purpose of this study was to compare operative outcomes and complications for patients having SPIF versus RFFF.

Methods

Forty-two patients having oral and oropharyngeal reconstruction with SIPF were compared to 51 patients who had RFFF reconstruction. Demographic and clinical characteristics of the patient population were recorded from the medical record. Measured outcomes included operative time, flap area, concurrent tracheotomy, lip split procedure, and hospital length of stay. Complications that were investigated included orocutaneous fistula formation, flap death, gastrostomy tube dependence, and donor site complications. Multivariate regression models were used to control for patient age, gender, and T-stage.

Results

Mean operative time using RFFF (670.8 minutes, 95% confidence interval [CI] 638.78-702.87 minutes) was significantly longer than SIPF (553.83 minutes, 95% CI 516.47-591.20 minutes). Tracheotomy ($p<0.001$) and lip split ($p<0.001$) procedures were more frequently performed with RFFF, while mean flap area was not significantly different ($p=0.184$). Length of hospital stay was significantly longer in RFFF patients than SIPF patients ($p<0.001$). Overall complications were more frequent in the RFFF group ($p<0.001$), and specifically orocutaneous fistula ($p=0.010$) and gastrostomy tube dependence ($p=0.011$).

Conclusions

SIPF reconstruction of oral and oropharyngeal defects resulted in decreased operative time, concurrent tracheotomy, and length of hospital stay compared to RFFF. Overall complications, and specifically orocutaneous fistula and gastrostomy tube dependence, were less frequent when SIPF reconstruction was performed.

Image



Table 2: (right) Comparison of the percentage of intra- and post-operative complications between RFFF and SIPF patient groups. Asterisk indicates a statistically significant difference

Recent Publications (minimum 5)

1. Paydarfar, J. A. and U. A. Patel (2011). "Submental Island Pedicled Flap vs Radial Forearm Free Flap for Oral Reconstruction: Comparison of Outcomes." Archives of Otolaryngology–Head & Neck Surgery **137**(1): 82-87.
2. Sittitrai, P., Reunmakkaew, D., & Srivanitchapoom, C. (2019). Submental island flap versus radial forearm free flap for oral tongue reconstruction: A comparison of complications and functional outcomes. The Journal of Laryngology & otology, 133(5),413-418. Doi:10.1017/S002215119000744
3. Forner, D., Phillips, T., Rigby, M. *et al.* Submental island flap reconstruction reduces cost in oral cancer reconstruction compared to radial forearm free flap reconstruction: a case series and cost analysis. *J of Otolaryngol - Head & Neck Surg* **45,** 11 (2016). https://doi.org/10.1186/s40463-016-0124-8
4. Jun Zhang, Yujing Wang, Xiaoxue Han, Huiqiao Chen, Comparison of Clinical Results and Quality-of-Life in Tongue Cancer Patients Undergoing Submental Island Flap and Radial Forearm Free Flap Reconstruction, Journal of Oral and Maxillofacial Surgery, Volume 78, Issue 9,2020,Pages 1639-1644
5. Alexandre Bozec, Pierre Demez, Jocelyn Gal, Emmanuel Chamorey, Marie-Yolande Louis, David Blanchard, Dominique De Raucourt, Jean-Claude Merol, Esteban Brenet, Olivier Dassonville, Gilles Poissonnet, José Santini, Frédéric Peyrade, Karen Benezery, Maria Lesnik, Etienne Berta, Pierre Ransy, Emmanuel Babin,
6. Long-term quality of life and psycho-social outcomes after oropharyngeal cancer surgery and radial forearm free-flap reconstruction: A GETTEC prospective multicentric study, Surgical Oncology, Volume 27, Issue 1, 2018, Pages 23-30,



Biography

Victoria Scott is a medical student in her third year at the University of Louisville School of Medicine. She earned her bachelors in neuroscience at Vanderbilt University and her master's in medical sciences at the University of Kentucky. She is a member of the Distinction track for medical education and is passionate about head and neck surgery and skull base approaches.

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